

RABIGH 2 – THE PHOENIX THAT FLEW

RABIGH 2 IPP WAS THE FIRST PROJECT IN THE KINGDOM OF SAUDI ARABIA TO BE AFFECTED BY A RECENT POLICY SHIFT ON FUEL. BY **ROHIT GOKHALE**, DIRECTOR AND **SOUDKI ATASSI**, ASSOCIATE DIRECTOR, ACQUISITIONS AND PROJECT FINANCE, **ACWA POWER**.

Recent global shifts in the energy sector have had far reaching political, economic and social consequences. Rabigh 2 IPP, Saudi Electricity Company's (SEC) fourth IPP, would experience the surprising impact of such shifts in the Kingdom of Saudi Arabia. In a surprise reversal from a longstanding policy of prohibiting the use of natural gas for power generation, and due to the discovery of gas on the west coast of the Kingdom, the off-taker switched the fuel for Rabigh 2 IPP from heavy fuel oil (HFO) to natural gas. With the financing documents under the HFO scheme already signed and placed in escrow, and legal counsels waiting for the green light to wrap up the formalities of signing, the timing of the switch could not have been more dramatic. However, given the inefficiencies of burning natural gas in a supercritical boiler – the project's original technology, the only option available to the off-taker and the sponsors was to overhaul the entire project.

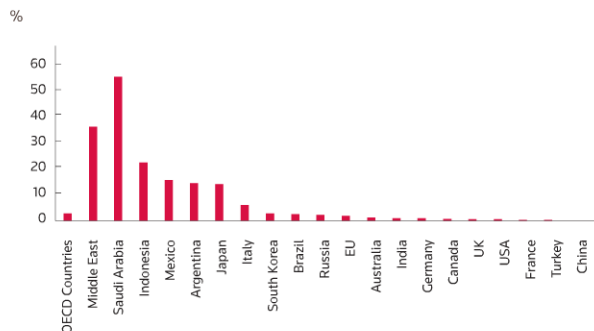
Policy overhaul

The Kingdom of Saudi Arabia has had a longstanding policy against the use of natural gas for power generation. Consequently, the kingdom has historically burnt a significant amount of its crude oil production for power generation. In 2011, 57% of the electricity in Saudi Arabia was generated from oil, the highest percentage out of the G20 economies and in stark contrast to an average of 37% for the Middle Eastern countries and a mere 3% average for OECD countries.

A recent shift has occurred in Saudi Arabia's energy policy in response to the relentless growth in power demand. Recognizing the opportunity cost on crude oil exports and the inefficiencies of burning oil for power generation, the Kingdom set off on a course to reduce its consumption of crude oil for power generation. As a result, Saudi Aramco, the state-owned oil and gas giant, has progressively been making more gas fields available for power generation. Furthermore, SEC has recently announced plans to convert its power plants to more efficient combined cycle gas turbines. Ziyad Al Shiha, chief executive officer of SEC stated that the company "expects that these current and future plans, once completed, will save approximately 200m barrels of fuel annually".

Rabigh 2 IPP was the first project to be affected by this policy shift. Originally tendered by SEC in 2012 as HFO fired power plant, the fuel was switched to natural gas after Saudi Aramco was able to provide natural gas to the project from its new gas fields on the west coast of the Kingdom. The consortium of ACWA Power (as lead developer) and Samsung C&T was awarded the preferred bidder status in January 2013. After three months of extensive developmental work, all documentation was ready to be signed in what would have been the fastest project from preferred bidder award to the signature milestone in the history of SEC's IPP Program. However, given the fuel switch, the sponsors were sent back to the drawing board.

PERCENTAGE OF ELECTRICITY GENERATED FROM OIL (2011)



Resurrection

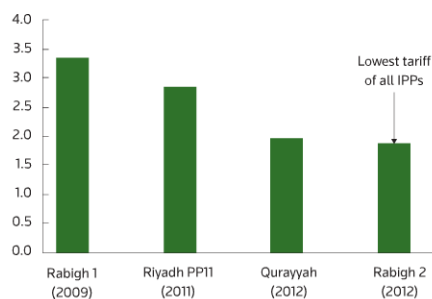
The original HFO fired plant was developed based on supercritical boiler technology. Possibilities of making the plant a dual fired plant (HFO and Natural Gas) or completely gas fired were explored but were quickly scrapped – burning natural gas in a supercritical boiler would be terribly inefficient in power generation and therefore, would not be a suitable solution for the off-taker or for the Kingdom. A decision was taken to switch the technology to a combined cycle gas turbine, and from that point, the mad scramble commenced as each contract was re-opened to fit the new technology. The EPC Contract was re-negotiated to cater for the new design. Equally critical was the sourcing of gas turbines which involved

negotiations with multiple suppliers to ensure value was eventually delivered to the off-taker. Along with the sourcing of the turbines, a long term service agreement was required for the maintenance of these machines and the O&M philosophy had to be re-thought to adapt to the new technology. Finally, the Power Purchase Agreement, which had a 25-year term under the HFO fired project, was shortened to a 20-year term forcing the tweaking of the debt financing.

The sponsors moved extremely quickly. Gas turbines along with their Long Term Service Agreement were eventually sourced from Siemens. The O&M philosophy was revised to align with the new technology. Finally, the financing was restructured to fit the new project parameters. With a levelised all in tariff of 7.13 Hafs/KWh (1.9 cents/KWh), the lowest tariff of any SEC project, the project documents of the new natural gas project were signed on the 30th of November 2013 giving birth to one of the most impressive projects under the SEC program.

SEC IPP TARIFFS

(US\$ CENTS/KWH)



Challenges

From the outset, the sponsors were confronted with a number of challenges. The summer season power demand peak in Saudi Arabia coincides with the pilgrimage season peak in 2016, with the combination expected to pose considerable stress on the Kingdom's power generation system. As a result, the off-taker needed the power before that start of the summer season in 2016. However, the new main fuel of the plant would not be available until early 2017. In a first amongst power projects, the sponsors offered the off-taker an optionality. Under the base case, one group would be commissioned on the plant's back-up fuel, Arabian Super Light, in time for the summer and Hajj seasons in June 2016. Once the required gas interconnection is ready to deliver gas in early 2017, the plant would be commissioned and operated with natural gas. However, the off-taker would have the option, if it determines that power is not needed in the summer 2016, to cancel Arabian Super Light operations and commission the plant on natural gas in early 2017. With the tariff remaining the same under both options, each project and

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finance document was carefully crafted to give the off-taker the freedom to choose the scenario that best suits its requirements.

Riyal grows up

In 2013, the Saudi riyal was dubbed as the new kid on the block (see "The Evolution of Project Finance for IPP/IWPPs in Saudi Arabia", PFI Global Energy Report 2013) for providing 51% of the debt of Qurayyah IPP. Today, the Saudi riyal has cemented its presence through providing 78% of the debt of Rabigh 2 IPP and 80% of its total project costs – the highest Saudi riyal contribution seen in the Kingdom, replacing the US\$ in power financing, and replacing export credit agency (ECA) funding in the first project to not have any ECA funding in the history of the SEC IPP Program.

From the start, the financing structure of the original HFO fired Rabigh 2 IPP was aggressive with long tenors of more than 20 years post PCOD. Without any ECA participation in the financing, and in a testament to its liquidity and maturity, Saudi riyal financing stood at a whopping 88% of the total project debt. Given the fact that the structure was fully subscribed and reached the signing milestone (even though was not eventually signed due to the fuel switch) implies that such structure is bankable.

Throughout the development phase, and specifically following the fuel switch to natural gas, lenders' support was crucial. Sustained and continued support kept the financing group intact and was key in enabling the development consortium to deliver the project in a short period of time despite the fuel switch. The PPA was shortened to 20 years which forced the reduction of the tenor to fit the PPA term.

Technical and insurance advisers were called upon one more time to revamp their due diligence given the change in technology. The project was eventually financed with commercial US\$ tranche (provided by KfW-IPEX Bank, Mizuho Bank, Samba Financial Group and Standard Chartered Bank), in addition to two Islamic SAR tranches, an Istsina Ijara facility (provided by Banque Saudi Fransi, National Commercial Bank and Samba Financial Group) and a Wakala Ijara facility (provided by Al Rajhi Bank and Al Inma Bank). Due to the difficulty in contracting interest rate hedges for Saudi riyal financing, and in order to reduce the risk of interest rates, a small amount of additional US\$ financing was introduced.